

System And Method Of Digitally Testing An Analog Driver Circuit

Abstract

A circuit and method of testing an analog driver circuit using digital scan-based test methodologies. The circuit of the present invention comprises a control circuit for generating signals in response to a test enable signal, a differential driver circuit for receiving a differential input signal, amplifying the differential input signal and transmitting a differential output signal in response to the differential input signal and the signals generated by the control circuit, a programmable termination impedance circuit for generating a differential termination impedance at the output node of the differential driver circuit in response the signals generated by the control circuit, and a differential receiver circuit for receiving the differential output from the differential driver circuit, convert the differential output signal to a single ended signal and transmitting the single ended signal, all in response to the test enable signal. The method of the present invention comprises digitally testing the differential driver circuit by activating a test enable signal, skewing the differential output termination

impedance in response to the test enable signal, adjusting a voltage offset of the differential receiver circuit in response to the test enable signal, selecting a power level for the differential driver circuit in response to the test enable signal, enabling a decoder in response to the test enable signal, wherein the decoder activates only one segment of the differential driver circuit during any one test sequence, activating one of the segments for testing, stimulating the differential driver circuit with digital test patterns, receiving an output of the differential driver circuit by the differential receiver circuit, converting the received differential driver output to a single-ended signal, observing the single-ended signal; and deactivating the test enable signal.